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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,100	10/02/2001	Vishnu K. Agarwal	500453.04	2699

27076 7590 02/07/2003

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EXAMINER
FLETCHER III, WILLIAM P

ART UNIT	PAPER NUMBER
1762	6

DATE MAILED: 02/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-6

Office Action Summary	Application No.	Applicant(s)	
	09/970,100	AGARWAL ET AL.	
	Examiner	Art Unit	
	William P. Fletcher III	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *55-57,59,69,70,72 and 80-83* is/are pending in the application.

4a) Of the above claim(s) *80-83* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *55-57,59,69,70 and 72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 October 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3 and 4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Detailed Office Action

I. Restriction & Provisional Election

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

① Claims 55 - 57, 59, 69, 70, and 72, drawn to a method of manufacturing a polishing pad, classified in class 427, subclass 430.1.

② Claims 80 and 81, drawn to a method of planarizing a micro-electronic substrate assembly, classified in class 451, subclass 28.

③ Claims 82 and 83, drawn to a polishing pad, classified in class 451, subclass 526.

The inventions are distinct, each from the other because of the following reasons:

Inventions ① and ③ are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process as claimed can be made to make another and materially different product: any product

other than a polishing pad such as a wear-resistant coated tool or abrasively-coated turbine engine component.

Inventions ② and ③ are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can be used in a materially different process of using that product: abrading any surface other than a micro-electronic substrate assembly such as wood, for example.

Inventions ① and ② are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not disclosed as capable of use together because a method of making a polishing pad cannot be used to planarize a micro-electronic substrate assembly, and *vice versa*. Further, the two methods clearly have different modes of operation, functions, or effects: one method results in a polishing pad and the other results in a planarized micro-electronic substrate assembly.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Steven H. Arterberry on 03 February 2003, a provisional election was made ***without*** traverse to prosecute the invention of group I, claims 55 - 57, 59, 69, 70, and 72. Affirmation of this election must be made by applicant in replying to this Office action. Claims 80 - 83 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

II. Form & Content of Application

Abstract

The abstract of the disclosure is objected to because it does not refer to and/or describe the elected method claims. Applicant is reminded that the abstract should include the following:

- if a machine or apparatus, its organization and operation
- if an article, its method of making
- if a process, the steps

Correction is required. See MPEP § 608.01(b).

Specification

The specification is objected to: the status of the related applications should be updated to reflect that each has issued as a United States Patent. Correction is required.

Drawings

The drawings are objected to by the Draftsperson as set-forth in the attached Form PTO-948. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information on How to Effect Drawing Changes

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted

(preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

3. Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

III. Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. **Claims 55 - 57, 69, and 70** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 10 of U.S. Patent No. 6,361,832 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claims 55 - 57 of the instant application are broader than and encompass all of the subject matter claimed in claim 1 of the patent. Likewise, claims 69 and 70 are broader than and encompass all of the subject matter claimed in claim 10 of the patent. In other words, in performing the method of claim 1 of the patent, it is necessary to perform all of the steps recited in claims 55 - 57 of the instant application. Likewise, in performing the method of claim 10 of the patent, it is necessary to perform all of the steps recited in claims 69 and 70. Consequently, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to perform the method of claims 55 - 57, 69, and 70, when carrying-out the method of the patent claims 1 and 10, because it would have been necessary to do so.

IV. Rejections under 35 U.S.C. § 112, 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 55 - 57, 59, 69, 70, and 72 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "hard" in claims 55 and 69 is a relative term which renders the claims indefinite. The term "hard" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

V. Rejections under 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 55, 56, and 69 are rejected under 35 U.S.C. 102(b) as being anticipated by Drawl (US 4,992,082; hereinafter "Drawl").

With respect to claim 55, Drawl teaches a method of manufacturing an abrasive tool for finish machining comprising: forming a plurality of contour surfaces over a first surface of a

backing member to project away from the first surface [see Fig. 3 where the contour surfaces are **62** and the examiner interprets the first surface of a backing member as defined by layers **60** and **61**; and c. 9, l. 15 - c. 11, l. 55]; and covering the contour surfaces with a cover layer of hard material that conforms to the contour surfaces to form nodules from the portions of the hard cover layer over the contour surfaces, the nodules projecting away from the first surface of the backing member [see Fig. 3, contour layer **64**; and c. 11, l. 56 - c. 13, l. 55]. The examiner notes that Drawl, at c. 12, ll. 2 - 18, teach, as cover layer materials, those materials disclosed by applicant at p. 10 of the specification. Consequently, it is the examiner's position that Drawl thereby satisfies the limitation requiring the cover layer material be "hard."

With respect to claim 56, Drawl teaches the method of claim 55, as described above, in which forming a plurality of contour surfaces comprises depositing a plurality of pattern elements over the first surface of the backing member, each pattern element having a portion projecting away from the first surface of the backing member, and the portions of the pattern elements projecting away from the backing member defining the contour surfaces [see Fig. 3 where, as noted above, the examiner interprets a contour surface to be constituted by one pattern element **62**].

With respect to claim 69, Drawl teaches a method of manufacturing an abrasive tool for finish machining comprising: distributing a plurality of pattern elements over a first surface of a backing member, the pattern elements defining a plurality of contour surfaces projecting away from the first surface of the backing member [see Fig. 3, where the pattern elements are **62** and

define a contour surface projecting away from the first surface of the backing member, and where the examiner interprets the first surface of the backing member as being defined by **60** and **61**; and c. 9, l. 15 - c. 11, l. 55]; and forming a layer of hard material at least on the pattern elements to conform to the contour surfaces, the portions of the cover layer over the contour surfaces projecting away from the first surface of the backing member to define abrasive nodules [see Fig. 3 where the cover layer is **64** and appears, to the examiner, to define abrasive nodules; and c. 8, l. 16 - c. 9, l. 12]. The examiner notes that Drawl, at c. 12, ll. 2 - 18, teach, as cover layer materials, those materials disclosed by applicant on p. 10 of the specification. Consequently, it is the examiner's position that Drawl thereby satisfies the limitation requiring the cover layer material be "hard."

VI. Rejections under 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 57, 59, 70, and 72** are rejected under 35 U.S.C. § 103(a) as being unpatentable over Drawl et al. (US 4,992,082; hereinafter "Drawl"), as applied to claims 56 and 69 respectively above, in further view of James et al. (US 6,069,080; hereinafter "James").

With respect to claims 57 and 59, Drawl teaches all of the limitations of these claims described above, except: with respect to claim 57, that depositing a plurality of pattern elements over the first surface comprises coating the first surface with a liquid containing the pattern elements and evaporating the liquid to leave the pattern elements directly on the first surface of the backing member; and, with respect to claim 59, that coating the first surface with the liquid containing the pattern elements comprises spraying the first surface of the backing member with a solution including the liquid and the pattern elements.

James teaches a method of manufacturing a fixed-abrasive polishing pad in which solid abrasive particles are dispersed in an aqueous solution and sprayed onto the substrate. "Each layer is dried...before application of subsequent layers" [c. 11, ll. 40 - 63]. Furthermore, James teaches that the sizes of these abrasive particles "are preferably in the range of 10 - 1000 nm" [c. 10, ll. 13 - 15].

Because James teaches spray coating solid abrasive particles of 10 - 1000 nm with subsequent evaporation, and because Drawl teaches the deposition of abrasive particles up to 10 microns in size [c. 10, l. 13], it would have been obvious to one of ordinary skill in the art to apply the abrasive particles in the method of Drawl by spray coating according to the method of James. One of ordinary skill would have been motivated by the desire and expectation of successfully coating the abrasive particles on the backing.

With respect to claims 70 and 72, Drawl teaches all of the limitations of these claims described above, except: with respect to claim 70, that depositing a plurality of pattern elements over the first surface comprises coating the first surface with a liquid containing the pattern

elements and evaporating the liquid to leave the pattern elements directly on the first surface of the backing member; and, with respect to claim 72, that coating the first surface with the liquid containing the pattern elements comprises spraying the first surface of the backing member with a solution including the liquid and the pattern elements.

James teaches a method of manufacturing a fixed-abrasive polishing pad in which solid abrasive particles are dispersed in an aqueous solution and sprayed onto the substrate. "Each layer is dried...before application of subsequent layers" [c. 11, ll. 40 - 63]. Furthermore, James teaches that the sizes of these abrasive particles "are preferably in the range of 10 - 1000 nm" [c. 10, ll. 13 - 15].

Because James teaches spray coating solid abrasive particles of 10 - 1000 nm with subsequent evaporation, and because Drawl teaches the deposition of abrasive particles up to 10 microns in size [c. 10, l. 13], it would have been obvious to one of ordinary skill in the art to apply the abrasive particles in the method of Drawl by spray coating according to the method of James. One of ordinary skill would have been motivated by the desire and expectation of successfully coating the abrasive particles on the backing.

VII. Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Phillip Fletcher III whose telephone number is (703) 308-7956. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

William Phillip Fletcher III
Patent Examiner
United States Patent & Trademark Office
Group Art Unit 1762

wpf
February 4, 2003

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